

WHAT IS CLAIMED IS:

1. A method for outputting signals from dark reference pixels, the method comprising the steps of:

(a) transferring signals from a plurality of dark reference pixels that are substantially shielded from light to a plurality of storage circuit elements; and

(b) transferring signals substantially simultaneously from each of the plurality of storage circuit elements to an operational amplifier on one clock cycle which operational amplifier substantially averages all the signals from the sample and hold circuits for providing an approximate average dark reference signal.

2. The method as in claim 1, wherein the storage circuit elements are sample and hold circuits.

3. The method as in claim 2 further comprising providing a differential operational amplifier as the operational amplifier.

4. The method as in claim 1, wherein step (a) further comprises transferring the pixel signals from the plurality of pixels to the plurality of storage elements on a row-by-row basis.

5. An image sensor assembly comprising:

(a) a plurality of active pixels that receives incident light that is converted into a charge;

(b) a plurality of storage element circuits;

(c) a plurality of dark reference pixels each of which is responsive to light and each of which is substantially shielded from light, wherein signals from each of the dark reference pixels is transferred to one of the storage element circuits; and

(d) an operational amplifier that receives a signal from each of the sample and hold circuits on one clock cycle, wherein the operational amplifier

averages the signals from the sample and hold circuits for providing an approximate average dark reference pixel signal.

6. The image sensor as in claim 5, wherein the storage element circuits are sample and hold circuits.

7. The image sensor as in claim 6, wherein each of the sample and hold circuits further comprises a charge storage element mated to each signal from the dark reference pixels, wherein a signal from each charge storage element is passed to the operational amplifier.

8. The image sensor as in claim 5, wherein the operational amplifier is a differential amplifier.

9. The image sensor as in claim 5, wherein the pixel signals are transferred from the plurality of pixels to the plurality of storage elements on a row-by-row basis.

10. A camera comprising:
an image sensor comprising:

(a) a plurality of active pixels that receives incident light that is converted into a charge;

(b) a plurality of storage element circuits;

(c) a plurality of dark reference pixels each of which is responsive to light and each of which is substantially shielded from light, wherein signals from each of the dark reference pixels is transferred to one of the storage element circuits; and

(d) an operational amplifier that receives a signal from each of the sample and hold circuits on one clock cycle, wherein the operational amplifier averages the signals from the sample and hold circuits for providing an approximate average dark reference pixel signal.

11. The camera as in claim 10, wherein the storage element circuits are sample and hold circuits.

12. The camera as in claim 11, wherein each of the sample and hold circuits further comprises a charge storage element mated to each signal from the dark reference pixels, wherein a signal from each charge storage element is passed to the operational amplifier.

13. The camera as in claim 10, wherein the operational amplifier is a differential amplifier.

14. The camera as in claim 10, wherein the pixel signals are transferred from the plurality of pixels to the plurality of storage elements on a row-by-row basis.